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ABSTRACT

The paradigm of modern psychology has been the determinism of Newtonian physics. That model earns psychology status as a science yet tunnels it to a linear way of unraveling human functioning. Responding to demands for a more holistic approach to psychological practice, it is necessary to redefine the "self" and other terms. Chaos, complexity, and self-organizing theories provide alternative meanings for disorder and therapeutic change. Chaos theories are affiliated with postmodern epistemology, an emerging worldview, and stand in contrast to positivism. Nonlinear models, which are able to reflect reciprocal engagement of subject and environment, provide more powerful foundations for psychotherapy than traditional determinism. Chaos theory, as a new metaphor for psychology in general and psychotherapy in particular, provides conceptualization for two agents of order: dissipation and bifurcation, which enhance understanding of therapeutic change. Functional concepts that augment existing therapies are: (1) new narratives as new attractors; (2) therapeutic autopoiesis as the unique outcome; (3) movement toward a higher order of the possible self; and (4) the coauthoring relationship as structural coupling. Not simply passive receivers for client stories, therapists are seen as active co-constructors in this new and demanding therapeutic context. (EMK)

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RUNNING HEAD: Chaos and Therapeutic Change

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Toward Therapeutic Autopoiesis:

Chaos, Complexity, and Narrative Therapy

Paper presented

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The 8th Annual International Conference

of

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Abstract

Newtonian model of psychology earns psychology a science status yet tunnels it to a linear way of unraveling human functioning. Responding to demands for a more holistic approach of psychological practices, this article turns to chaos, complexity, and self-organizing theories for alterative meanings for dis-order and therapeutic change. Chaos, as a new metaphor for psychology in general and psychotherapy in particular, provides two agents of order - dissipation and bifurcation - enhancing understanding of therapeutic change. Affiliated with postmodernism, chaos theories also augment the workhorse of psychotherapy with ideas that can evict fear from the therapeutic relationship, bringing respect and dignity to the chaotic elements of clients' narratives.

Chaos and Therapeutic Change:

Toward a Higher Order of the Autopoietic Self

In his presidential address in the American Psychological Association's Monitor, Seligman (1998, April) pointed out that research psychology has relentlessly focused on negative mental phenomenon, leaving psychology "blind to the many instances of growth, mastery, drive, and insight that develop out of undesirable, painful life events" (p. 2). According to Seligman, modern psychology unravels human functioning within a disease model, thus assuming the role of repairman for the damage. Seligman's remark reflects a common criticism toward modern psychology, particularly psychotherapy. Repairing damage has resided at the heart of psychotherapy. Mahoney and Moes (1997), for examples, contend that the psychotherapy community has long regarded disorder as the cause of individual or societal dysfunction and hence has preoccupied itself with disorders. Mahoney and Moes state:

> "With rare and noteworthy exceptions, it is presumed that something is wrong with the client. In fact, in managed care and third-party coverage of the costs of psychotherapy, authorization for treatment is dependent on and linked to the severity of that 'something wrong,' codified in a language of disease and disorder" (p. 187-188).

As Butz, Chamberlain and McCown (1997) argue, the notion that clients are "sick" and need to be "fixed" derives from an outdated concept of illness. While diving into the depth of what is wrong within clients, modern psychology obscures its vision from what makes human life most productive (Seligman, 1998, April). This preoccupation with "something wrong" has been of concern to many researchers (Glass, 1987; Parry, 1996; Perna, 1997) who criticize

that psychological research, based on pure rationalism, tends to "irrationalize" the inevitable strife and the profound struggles of human existence. Indeed, clients' presenting problems, such as anxiety or depression, tend to be seen as disorders or "noisy aberrations to be silenced" (Parry, 1996, p. 240). These criticisms call for a re-conceptualization of the meanings of disorder. Taking one step forward, Butz et al. (1997) assert that the misuse of the medical/disease model is so ingrained in many psychotherapists that a paradigm shift is needed to alter it.

Newtonian Model of Psychology

The paradigm of modern psychology has been one of the determinism of Newtonian physics (Milovanovic, 1995; Perna, 1997). This determinism appears within contemporary psychology in the form of positivism "which maintains an essentially mechanistic, reductionistic, and linear conceptual basis" (Kaplan & Kaplan, 1991, p. 161). It is understandable that, as a young discipline longing for acceptance as a "hard" science, psychology would emulate logical positivism, linearity and reductionism (Perna & Masterpasqua, 1997). In its striving toward becoming a hard science, psychology has increasingly depended on empirical methods seeking to "break down patterns of behavior into the lowest common elements and thereby establish a set of universal 'rules'" (Butz, Chamberlain, McCown, 1997, p. 36). The science status has been successfully earned, yet with a high cost.

The cost disquiets many researchers (Butz, Chamberlain, & McCown; 1997; Lonie, 1991; Masterpasqua, 1997); they argue that reductionist models tend to destroy the very nature of scientific inquiry by attempting to simplify it. As scientific inquiry focuses on discrete

aspects of a problem, it tends to overlook the complex context in which most problems are embedded. Under this reductionist influence, psychology and psychotherapy research tends to operate with an assumption that everything has a defined nature, that events are fully predictable and predetermined, and that an event can be considered separately from the agent of that event (Lonie, 1991). The result is a therapeutic lens that sees the human psyche as "decontextualized and monadic" (Masterpasqua, 1997, p. 28).

A central quest for psychologists in general and psychotherapists in particular is to understand what constitutes therapeutic change in client systems. Through the decontextualizing lens, scientific psychology relies on the cornerstone of a cause and effect linear model for therapeutic change. Within this model, if therapeutic change is not demonstrated immediately or soon after therapy, it is assumed absent (Butz, Chamberlain & McCown, 1997). This kind of linear model may be appropriate for problems treated from behavioral and learning theory perspectives as these approaches are primarily linear. Yet, it is found wanting when applied to human systems that are intricate in nature.

The Intricacy of the Postmodern Self

Searching for alternative models for explaining the human psyche, we need to redefine what constitutes the self and what constitutes "disorder." The self of human systems in the postmodern era is a complex, multifaceted, and ever-evolving self, suspended in a milieu of multiple perspectives (Guidano, 1987; Linville, 1987; Mahoney & Moes, 1997; Markus & Nurius, 1986; Perna & Masterpasqua, 1997; Stein & Markus, 1994; Wurf & Markus, 1991). Within this postmodern milieu, the self exists in a state of constant construction and reconstruction (Gergen, 1991). Embedded in multifaceted contexts and in continuous

construction, the human experience cannot conceivably be explained and predicted by a mechanistic, reductionistic, and linear conceptual models. Butz (1992) speaks with eloquence of the human psyche's sensitivity to its embedding context: "The psyche is an immensely intricate and sensitive system, highly sensitive to intrapsychic and extrapsychic pressure" (p. 831). As sensitive as it is, when this system is under a high degree of circumstantial stress or is confronted by an influx of unfathomable materials, the psyche's ability to adapt and maintain equilibrium is overwhelmed, resulting in a state of disorganization or turbulence (Halpern, Canale, Bant, & Bellamy, 1987; Parry, 1996). The anxiety resulting from such a turbulent state often devastates and immobilizes people (Butz, 1992; Hager, 1992). It is often in this immobilized state that the afflicted are seen in psychotherapy and, sadly, diagnosed with disorders as mandated by managed care. Disorders often connote deviation and pathology (Masterpasqua, 1997). Such connotation leaves little room for dignity in people who have already suffered the terrifying state of disorganization and immobilization. To restore dignity to clients, it is imperative to revisit the meanings of clients' problems.

I believe that a client in immobilization and turbulence can be seen, not as a person with disorder or pathology, but as a self-system "encapsulated" (Masterpasqua, 1997) or "stuck" (Durrant, 1993). In other words, in their attempt to maintain equilibrium and avoid emotional pain under predicament, clients become so encapsulated in their old ways of coping that they become trapped. As Masterpasqua (1997) points out, encapsulation leads clients to resist both "the inevitable emergent novelty woven into the process of living" (p. 36) and "the ineluctable reorganization that results" (p. 34). When stuck, clients' system becomes locked in a feedback loop of attenuated adaptive efforts; the attenuated coping strategies continually

replicate themselves as the system feeds back on itself (Kossmann & Bullrich, 1997; Lewis & Junyk, 1997; Perna, 1997). The client's system is thus eventually strained to the point of losing its ability to adapt. To be locked in such a loop for survival is the client's downfall. Limiting as it is, being stuck, however, does not equate to pathology. As Mahoney and Moes (1997) state: "A 'disordered person' is one whose integrative activities are being strained by current challenges. He or she is usually neither sick nor diseased in the traditional sense of these terms" (p. 189). Mahoney and Moes (1997) continue:

> "Resistance to change is not pathological or self-defeating phenomenon. Instead, it is a natural self-protective expression of attempts to maintain the integrity of a system that experiences itself as being pushed too quickly or too far beyond the boundaries of its familiar functioning" (p. 181).

This natural self-protection, if interpreted and responded to as pathology and deviation as in traditional psychotherapy, will inevitably bring shame, powerlessness, and alienation (Perna, 1997) to the client experiencing this turbulent states .

Given this, I believe that, when conceptualizing client "disorders" and change processes, psychology as a profession needs to shift from a metaphor of pathology toward one that recognizes the complexity of human psyche systems. Toward this shift, this article turns to concepts drawn from chaos theory, complexity theory, and self-organizing systems. It is my hope that with these new lenses, we will be able to see the process of therapeutic change in an invigorating light.

Chaos As a New Metaphor

Chaos theory is increasingly becoming a key metaphor in postmodern analysis

(Milovanovic, 1995). The founding figures include Ilya Prigogine, Henri Poincare, Mitchell Feigenbaum, Benoit Mandelbrot, and Edward Lorenz (Gleick, 1987). Chaos and its interrelated concepts - complexity and self-organization - have generated a great deal of interest in physics, chemistry, and biology; yet the majority of psychologists know little about these concepts (Barton, 1994). Although psychologists need not master technical understanding of chaos, nonlinear dynamics and self-organization from the perspective of mathematics or physics (Barton, 1994), they would gain advantages in serving clients when acquainted with concepts applicable to their clinical practice.

Chaos

Prior to 1980, "chaos" was a word that indicated something to be eliminated in the quest of order and certainty. Since 1980 chaos has ceased to be a word and has instead become a "new science" (Gleick, 1989; Smith, 1995). As Milovanovic (1995) states: "Chaos theory...and quantum mechanics stipulate that proportional effects do not necessarily follow some incremental increase of an input variable. Uncertainty, indeterminant, disproportional (non-linear) effects are all underlying assumptions and worthy of inquiry in explaining an event" (p. 36). Chaos theory denotes that most complex systems in nature are better modeled by differential equations than by linear models (Butz, Chamberlain, McCown, 1997; Kellert, 1993). Through chaos theory, we are informed that chaotic behavior occurs in a deterministic system (Perna & Masterpasqua, 1997; Stewart, 1989); and that the apparently disordered local behavior is indeed stable from a global perspective and can act as a creative force to generate complexity (Gleick, 1987).

Complexity

Complexity studies afford us one of the most promising directions for development in psychological theories and psychotherapy (Mahoney & Moes, 1997). Until recently, discussion of complexity in psychology has focused predominantly on personality organization and social cognition (Coren & Suedfeld, 1995; Mahoney & Moes, 1997) to the exclusion of a broader systemic view. With the emergence of chaos theory, however, comes the sister science of complexity. Central to complexity theory is the concept that, within a living system, many agents are interrelated and they interact to dissipate energy within the whole system, allowing the system to undergo spontaneous self-organization (Masterpasqua, 1997; Perna, 1997; Waldrop, 1992). In addition to intra-system interaction, the living system continually interacts with the external environment, remaining open and learning from experiences (Kossmann & Bullrich, 1997). Building on interactions with internal and external agents, the system reaches a balance between chaos and order, between stagnation and anarchy. Coined as "the edge of chaos" (Waldrop, 1992, p. 12), this balance point is the very state where the living system is most adaptive and alive.

Self-Organization

The theory of self-organization is intricately linked with chaos and complexity theories in the dynamic development of living systems. Specifically, the theory of self-organization posits that living systems are governed by non-linear dynamics with an inherent instability that creates periods of chaos. It is at the edge of chaos that the living system are most capable of generating spontaneous change or self-organization. This spontaneous emergence of order out of chaos reflects the capacity of all living systems to regenerate following inner guidelines (Butz, Chamberlain, & McCown, 1997; Caple, 1985; Kaplan & Kaplan, 1991; Parry, 1996;

Perna and Masterpasqua (1997). As optimal as it is, this self-organization is rendered possible only when the systems are reciprocally engaged with their contexts or environment. When maximum information exchange with their contexts occurs, the systems are more likely to be pushed toward the edge of chaos, and optimally, greater adaptivity and complexity (Masterpasqua, 1997; Parry, 1996).

Chaos and Therapeutic Change

Equipped with the concepts from chaos, complexity, and self-organization theories, we are able to conceptualize "disorder" using a different metaphor. At the same time, chaos theories bring forth new understanding of processes leading to therapeutic change. The sections that follow depict two agents of order drawn from chaos theories - dissipation, and bifurcation - that act to enhance our understanding of the transformation process.

Dissipation

At the core of a living system's ability for change lies the boundary of that system. Kossmann and Bullrich (1997) point out that a behavior that appears maladaptive is usually the result of a system attempting to avoid disorganization by closing its boundaries when facing novel challenges. Closed boundaries, although temporarily helpful to avoid disorganization, ultimately lead the system to encapsulation. In contrast, boundaries that are open permit "dissipation" through which new behaviors emerge. Dissipation, a term used by Prigogine and his colleagues (1984), is the dispersion of entropy that prevents its accumulation which results in eventual system disintegration. Dissipation is described as an agent of order. During dissipation, the structures of a living system are subjected to extreme perturbations; the erratic behavior of the system acts as a creative process, generating a higher order of

complexity, and moving the system toward transformation (Gleick, 1987; McLeod, 1988). To dissipate entropy, a system must remain open and allow new energy and information to flow through. Such flowing occurs, however, only when a system is in the state of dis-equilibrium. Thus, it paradoxically takes a chaotic process to dissipate the disturbances, allowing a new pattern to emerge (Conrad, 1986; Kossmann & Bullrich, 1997).

For a human system, the potential for change is much greater after dissipation of maladaptive structure, (Halpern, Canale, Bant, and Bellamy, 1987). For many people, however, the chaos and far-from-equilibrium states preceding dissipation equate pathology. Masterpasqua (1997) contests this misconception, stating: "The symptoms cast as pathology in mechanistic, linear models may well reflect an individual precariously ready to move to a more complex reorganization of his or her own making" (p. 37). If dissipation is a pathway toward self re-organization, then clients' experienced disorganization and turbulence are not necessarily disorders and disease. Rather, they can be states of maximum readiness for a more advanced self-system to emerge. Thus, the immobilized state seen by traditional views as disorder is indeed no more than "surface disorder" beneath which "at a preconscious level there is all the while a new order being constructed" (Hager, 1992, p. 383). The edge of chaos, as the precursor of new order, is transformative and adaptive.

Bifurcation

Within a living system, two kinds of change can happen: first-order and second-order change. First-order change involves gradual shifting or adjusting; it is characterized by an even flowing and mutual adaptation between the living system and the environment. Most developmental change belongs to this kind of smooth first-order path.

The process of change, however, is not always so smooth. At times fluctuations within the system create a kind of turbulence; consequently, the individual's cognition, emotions and behaviors are traversed by sudden, qualitative changes into a radically new pattern. This qualitative leap is termed a second-order change (Kossmann & Bullrich, 1997; Lewis & Junyk, 1997; Prigogine & Stengers, 1984; Watzlawich, Weakland, & Fisch, 1974). Much therapeutic change in complex client systems belongs to this second-order path. Yet, this type of second-order change arises often through the points of "bifurcation." In chaotician language, bifurcation is the branching, splitting and evolving of dynamics within a system (Butz, Chamberlain, & McCown, 1997); bifurcation happens when perturbation is potent enough to move the system from a periodic pattern to one that is nonlinear (Perna & Masterpasqua, 1997). Because the bifurcation point is where fluctuation is amplified and the probability of variation is maximized, it becomes a transition point where the system reorders or reorganizes itself, creating a new structure (Fogel & Lyra, 1997; Perna, 1997; Prigogine & Stengers, 1984). In human systems, the ability to find unique ways to bifurcate characterize the ability to adapt. Bifurcations, however, are intensified through periods of chaos and accompanied by overwhelming anxiety. If not tolerated, the anxiety accompanying it may lead clients to resist change, keeping them stuck. If adopted, it can lead to an individual's transformation (Butz, Chamberlain, & McCown, 1997). This connection between bifurcation, chaos, and second-order change leads Butz et al. (1997) to call a crisis point a developmental "bifurcation point." Given the capacity of bifurcation, it is sensible to honor chaos as a prerequisite for client self-transformation. Unbroken stability, on the other hand, spells stagnation or even death (Butz, Chamberlain, & McCown, 1997; Prigogine & Stengers, 1984).

Advancing Psychotherapy with Chaos Theories

Besides offering a new metaphor and enhancing understanding of the change process, chaos theories can especially augment the practice of psychotherapy. Although seemingly unrelated, chaos theories affiliate intimately with postmodern epistemology and stand in contrast to modernism. As an emerging world view, postmodernism acts to complement modernism (Gergen, 1990; Hare-Mustin & Marecek, 1988; Polkinghorne, 1992). Modernism holds that there is a single reality that can be known by a self-contained, individuated knower; whereas postmodernism questions the notion of an essential or core self. Specifically, postmodernists view the self as inextricably embedded in a matrix of others, and "truth" itself as intersubjective and residing in multiple realities (Hare-Mustin & Marecek, 1988; Polkinghorne, 1992). Under the influence of modernism, psychology frequently reduces complex human experience to the realm of self-contained individualism (Cushman, 1993) reducing its conceptual bases into a mechanistic, reductionistic and linear form (Kaplan & Kaplan, 1991). Conversely, postmodernists stress that human experience must be interpreted within the complex contexts that embed their existence. Similar to postmodernism, chaos theories stand in sharp contrast to positivism. Both postmodernism and chaos theories argue that complex systems must be understood by using non-linear models, and that self-organization toward a higher degree of complexity is possible only when systems are reciprocally engaged with their contexts or environment (Butz, Chamberlain, & McCown, 1997; Kellert, 1993; Kossmann & Bullrich, 1997; Masterpasqua, 1997; Parry, 1996).

Postmodernism has provided enlivening theoretical foundations for psychotherapy through social constructionism. Emerging from under the umbrella of postmodernism, social

constructionism construes human experience as being constituted by meaning-making interaction with others. The ways meanings are made or narrated in our lives shape how we perceive our problems and arrive at particular solutions (Hoffman, 1992; Hubble & O'Hanlon, 1992). Social constructionists thus accentuate the ways our self-narratives are constructed as we use narratives to lend meanings to our experiences by selecting, re-ordering, and reflecting on these experiences. Since our narratives are constrained by the language we use, social constructionists consider it crucial to understand the role that language plays in constructing human interaction and experiences (Fruggeri, 1992; Howard, 1991; Lax, 1992; Parry & Doan, 1994). Successful psychotherapy, therefore, requires a process enabling clients to change the narratives in which they live (Fruggeri, 1992; Howard, 1991; Lax, 1992; Parry & Doan, 1994). In this process, therapists act, not as passive receivers for client stories, but as active co-constructors in the therapeutic context (Cecchin, 1992). The responsibility of therapists thus encompasses "the dialogical creation of new narratives" (Anderson and Goolishian, 1992, p. 28). Such intentional co-construction of client narratives characterizes social constructionism oriented psychotherapy (Parry & Doan, 1994; White, 1995; White & Epston, 1990).

Co-constructing the kinds of narratives that produce more productive meanings for clients is a demanding endeavor. Concepts from chaos theories can offer augmentation to the workhorse of psychotherapy, rendering its endeavor more resourceful. Ideas that can achieve this augmentation include: (1) new narratives as new attractors; (2) therapeutic autopoiesis as the unique outcome; (3) movement toward a higher order of the possible self; and (4) the co-authoring relationship as structural coupling.

New Narratives as New Attractors

Howard (1991) states that all forms of thought can be considered as narrative; the self is a narrative. We are both actors and authors of our own life stories. An incoherent narrative is an ineffective narrative that stagnates and encapsulates the self. As Parry (1996) indicates, the narrative we develop for our world sometimes gets in the way of receiving and understanding new information when this new information does not fit into the prevailing narrative. Deconstructing an ineffective self narrative involves re-meaning and re-languaging. As Greenberg and Paivio (1997) assert, emotions and cognition are intimately connected with meanings. Forming new meaning thus serves as an impetus for narrative reconstruction. Creating new story lines or narrative plot, however, can only happen in the context of a relationship (Fogel & Lyra, 1997; Harre, 1988; Knoespel, 1991; Sarbin, 1986). In other words, client narrative is ever co-constructed with others, for "meaning arises in the dynamic dialogue" (Fogel and Lyra, 1997, p. 76). Meaning is jointly created. As Kossmann and Bullrich (1997) state "meaning, knowledge and learning are the result of interdependent systems shaping one another's organizational activity" (p. 211).

Co-creating with the client a new meaning system requires the therapist to provide the client with an opportunity for experiencing a new "attractor." An attractor, in the language of chaos theory, means a place where trajectories converge (Baker & Gollub, 1990). In psychotherapy, new attractors mean new experiential patterns in client systems. New attractors, as articulated by Butz, et al. (1997), can be created by using language to redefine new meaning, challenging the existing patterns that define the client's meaning system. That which constitutes this meaning system is the client's narrative. When the new meaning

becomes a new attractor, order will emerge from the chaos of gestation. The new attractor experienced by the client then acts as the axis (Hager, 1992) organizing the client's expanded experience .

Therapeutic Autopoiesis as the Unique Outcome

Jerome D. Frank (in McGinnis, 1990) states: "Psychotherapists should above all be 'purveyors of hope'" (p. 37). The ideas drawn from chaos theories can bring hope to clients and therapists. The embryo of this hope resides in autopoiesis. Autopoiesis, originated by Maturana, a biologist, is a mode of autonomous organization that produces an organizational process within its own organic structure (Varela, 1989). According to Maturana (1980), all living organisms are autopoietic; that is, they are characterized literally as continually self-organizing and self-producing. It can be inferred that, as a living organism, the human psyche is also an autopoietic dynamic system; it knows how to structure itself through dissipative energy exchange with the environment, and it knows where to exist in its environmental context (Kaplan & Kaplan, 1991; Perna, 1997). This capability to arrive at unique ways toward autopoiesis certainly exists within clients; if it didn't, clients would have been stagnated in life.

Although clients often self-organize through unique ways toward autopoiesis, White and Epston (1990), however, note that the narratives clients tell about themselves are primarily problem-saturated. This problem-saturated story forbids other stories to emerge, leaving little room for self competency and personal agency. This concurs with what Salman Rushdie (in Parry, 1996) says: "Every story is a kind of censorship. It prevents the telling of many other stories" (p. 239). Those other stories that do not fit into the dominant story tend to be

dismissed as of little significance, random events, luck, exceptions to the rule (Parry (1996). In psychotherapy, every problem-saturated story a client tells censors other stories that mark the client's generative autopoiesis.

Stories that mark clients' generative autopoiesis equate with what White (1989) calls "unique outcomes." Unique outcomes are the existing successes clients have had in solving many of their life problems; they are unique as they are distinct from the dominant stories clients typically tell. Narrative therapists have called these unique outcomes "sparkling events" (Freedman & Combs, 1996), "off-stage voices" (Rosen, 1987), or "counterplots" (Freedman & Combs, 1996). These already existing resources and skills, however, often get forgotten and unnoticed when the going gets tough or when things get stuck. Unnoticed or forgotten, these unique outcomes become censored stories, leading clients to see their lives through a problem-saturated lens.

These censored autopoietic outcomes are the very stories a therapist needs to seek in countering the problem-saturated narrative if he/she is to become the "purveyor of hope." The search for this generative, autopoietic outcome can be illustrated by Bankart (1997):

> "I can quite successfully conceptualize almost all the problems clients bring to me in terms of autopoiesis and regression. What works best, in most cases, is to find a situation in clients' lives where they have been dynamically autopoietic. If they take those situations as models for the problems they are currently facing, I can usually get them to discover the parameters of their own solutions, without butting into their private affairs and decision" (p. 387).

When therapist help clients recall these forgotten autopoietic outcomes, clients' previously

unnoticed strengths and personal resources are more likely to come to light.

Toward a Higher Order of the Possible Self

When given needed supports, the human psyche as a dynamic system can continually self-organize, moving toward a possible self within its autopoietic capacity. Markus and Nurius (1986) state: "possible selves are views of the self that often have not been verified or confirmed by social experience" (p. 955). Yet self knowledge of this type exerts a significant influence on individual functioning. The notion of possible self underlies growth and self-change because it provides vivid images of the self in future preferred states, serving as impetus for action (Markus & Nurius, 1986; Wurf & Markus, 1991). This possible self, though not yet verified by social experiences, may represent the higher order of self-complexity a living system is most capable of generating when pushed toward the edge of chaos. Butz (1992) depicts the function of psychotherapy as leading the client toward a more adaptive and complex self, able to respond to greater extrapsychic and intrapsychic demands. Moving toward this autopoietic self is moving toward preferred behaviors that embody clients' desired self-concepts. Therapists can use reflexive questions to plant seeds in clients, preparing them for the emergence of the preferred behaviors. Therapists can listen to any slight hue of life-forward direction implied in the client's intention and then respond to that intention. Since the emerging possible self is the type of self-knowledge that has not been verified by social experience, it can easily be dismissed by clients themselves. As vulnerable as it is, the possible self is also sensitive to outside input that communicates new or inconsistent information about the system (Markus & Nurius, 1986). Given its sensitivity to outside input, therapists can planfully guide the client toward the possible autopoietic self by

prompting them to the growth edge and to what the client is groping towards. The therapist's prompting of preferred outcomes generates a self-concept of possibility, furthering the growth and change developed in therapy.

The Co-authoring Relationship as a Structural Coupling

The therapist's manner in working with a client experiencing turbulence is critical for maintaining therapeutic momentum. In his or her crisis state, the client is very vulnerable to the therapist's belief system and can easily be tipped by the therapist's manner in the direction of growth or toward protective retreat into safe yet self-encapsulating modes of living (Hager, 1992). In Maturana and Varela's (1988) terminology, the therapist and the client are structurally coupled, that is, the therapist and the client are jointly engaged in the process of organizing a new system. This therapist-client structural coupling is indeed a "co-authoring" (White, 1995) process where the therapist and the client jointly share responsibility for the shaping of the conversation and the creating of their narratives.

To co-author with the client toward creating a narrative of hope, the therapist needs to have faith in the client's ability to rebound from chaos and to show signs for supporting the client's inward search for order (Hager, 1992). Only through the therapist's openness to the manifestations of the disorganizing psyche can a client's integrated psychic structure emerge. A therapist's faith in his/her client provides a sense of security for the client. As Perna (1997) states, autopoiesis is fostered within the secure context of the holding environment - the therapeutic relationship. This safe holding environment makes possible the co-authoring process, permitting the dis-order inherent within complex client system to reorganize toward greater complexity (Masterpasqua, 1997). This collaborative co-authoring relationship then

becomes an attractor within the client self system. Entering therapy thus becomes a way to establish a new attractor that can restore order into the chaotic state in the client system (Butz, Chamberlain, & McCown, 1997; Derrickson-Kossmann & Drinkard, 1997)

If a therapist does not trust his/her clients' ability for self-organizing at the edge of chaos, he/she is likely to be destablized by clients' expressions of emotional intensity and variability. Consequently, he or she may be tempted to rescue the client who is desperately groping for external directives. This attempt to rescue or over-intervene may help clients escape distress temporarily, yet, it subjugates the co-authoring process, robbing the client of an opportunity for growth (Mahoney & Moes,1997; Hager, 1992). Based on the above rationale, therapists, when facing client chaos, should avoid exerting power and control as well as aggressive interventions that are popular in the therapeutic community (Butz, Chamberlain, & McCown, 1997). Any activeness should be directed toward the search for clients' autopoietic outcome and for the higher order of the client's possible self. This leads to a reminder for therapists: chaos, disorder and the client experiencing them must be embraced in the therapeutic process. To do otherwise is "to deny 'the motion of life' and to serve as a source of alienation" (Masterpasqua, 1997, p. 36).

Closing Remarks

Through this article I hope to bring forth a more holistic, dynamic and humanistic appreciation of the roles that "disorders" and problems play in human systems. Understanding clients' presenting problems as predicaments in which they are encapsulated helps us see the process of client change, not as one of cure, but as one of starting out on a different path toward higher levels of competency. Chaos, complexity and self-organization theories provide

an alternative framework allowing us to view the problem clients bring to therapy, not as a disorder, but as a call for the client to evolve into a more adaptive self. Many people may not be accustomed to thinking of human instability as a pathway toward progression. This article hopes to accustom both therapists and clients to the thinking that acute or chronic episodes of personal disorganization are not necessarily the dragon of mental well-being. Indeed, in rites of passage, the chaos and confusion often experienced in the liminal stage (Epston & White, 1992; van Gennep, 1960) are prerequisites for life transition. Many researchers have indicated that some degree of turbulence, aberration or instability in the face of stressors, although feared by most people, may be the necessary path toward re-organizing the self into a greater degree of adaptation and complexity (Butz, Chamberlain, & McCown, 1997; Kossmann & Bullrich, 1997; Mahoney & Moes, 1997; Parry, 1996). This position resonates with Seligman's (1998, April) stance that undesirable experiences often produce extraordinary growth and creativity in people. It also echoes Mezirow's (1994) transformation theory, recognizing that a negatively experienced "disorienting dilemma" often serves as a trigger for personal transformation. Of course, I agree with Mahoney and Moes (1997) and take caution to mention that not all periods of destablization usher in the emergence of a healthier system; chaotic states, such as regression, psychosis, borderline states or organic conditions, often demand radical interventions for remedy.

For therapists, chaos theories bring into the therapeutic process an empowering faith in their clients. Therapists are reminded that the client, like all human beings, constantly and actively organizes and reorganizes his or her billions of neural connections in the brain so as to form new possibilities, to learn from experience, and to turn whatever happens to his or her

advantage (Waldrop, 1992). This faith evicts fear from the therapeutic relationship, recognizing that clients in chaos are indeed those most capable of reorganization if given needed support. As a result, therapists are more able to respect and celebrate "the role of ever-present cascades of disorganization" (Mahoney & Moes, 1997, p. 188) in the client's dynamics and systems. This spirit of respect and celebration enables the therapists to co-author with clients, bringing order to the chaotic elements of the story line.

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